NOTE VIII.

ON THE WINTERNEST OF THE DWARF-MOUSE (MUS MINUTUS).

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The mode of nidification of the Dwarf- or Harvest-Mouse, essentially different from that of its congeners, is a fact well known to naturalists, and so singular in its nature, that it must attract the curiosity of every one.

Little, however, is known about the varieties which the nests present and nothing at all about the very different kinds of nests, which the little animal builds in certain localities for its retreat in the cold season.

Although spread over a great part of Europe as far as Western Asia, the Dwarf-Mouse is generally reputed a species of rare occurrence. This fact finds its explication in several circumstances. The little creature easily escapes the attention of man on account of its diminuative size and the rapidity of its motions. In other instances it is taken, notwithstanding the difference in colour, for the young of the common wild mouse (*Mus sylvaticus*). The nests are generally regarded by the people as bird's nests, and this goes so far, that even experienced hunters could not be convinced of the contrary. When I called the attention of some mowers to these nests, they assured me, that they had occasionally seen them in the fields, but had always looked upon them as a mere conglomeration of dry grass. The greatest difficulty to observe these little animals lies in the particular mode of their distribution over the country. In general, they occur in isolated couples in brushwood, cornfields and meadows, but nobody will be aware of their presence, unless he detects one of their nests; and if he has the rare luck to find one, he will soon conclude, that the species is spread over the country in single couples living at great distances from one another. It is indeed an exceptional case, when they are found forming a colony, and such a one is sometimes restricted to a locality of little extent. When surprised by inundation of the meadows, they are sometimes seen flocking together in considerable numbers, trying to save themselves by climbing up to the crown of grass and plants.

The system of colonisation of this animal is, however, not permanent, the colony being often reduced in the following year to a small number of couples. No doubt, that the increased number produced by a favourable multiplication in certain years, contributes to the fluctuation observed in the distribution of these animals.

I now purpose to enter into some details about a colony of the Dwarf-Mouse I met with in the summer ot the year 1868, in a locality, not examined before that time in its whole extent, and of which colony only a small number of couples remained in the following years. This locality is situated at the distance of about two miles from the town of Leiden, in the neighbourhood of the castle of Endegeest, celebrated for having served as a refuge to the philosopher Descartes, after his exile from France. There exists, on the right side of the road, leading to the neighbouring village of Rynsburg, not less celebrated for its Abbey and as the residence of the freethinker Spinoza, a ditch of about a quarter of a mile in length and six paces in width, intersecting a field planted with vegetables. Its right border was for one half of the length, grown with high reed, the other longitudinal half showing no vegetation. The ditch, however, being blind at the end, became partly dry, by evaporation, during the hot season. It was in the reeds of this ditch, that a part of the colony of the Dwarf-Mouse had settled and had built their nests, also making use, for this purpose, of the herbs growing near the border side.

After having detected the colony, I gave my orders to a man, who for more than forty years has been in the service of the Museum, and who has no other charge than accompanying myself or our sportsmen when out in the field, a man who catches birds, fishes and other animals, seeks nests and eggs of birds and gathers all sorts of objects from the sea-shore. During the whole year, he was to go to the spot every week, in order to observe the little mice in question, and to extend his excursions, in search for others, for several miles in the neighbourhood, whereas I myself from time to time visited the field of our observations.

It soon appeared, that the reeds of the ditch contained about fifty nests of the Dwarf-Mouse, that isolated nests were found in the neighbouring lanes, scattered here and there in herbs growing amongst the brushwood, and that a small part of the colony had established itself, likewise in herbs amongst brushwood, at the distance of about a mile from the principal colony, occupying the reeds of the ditch. The nests of this smaller colony were likewise scattered in places fit for the purpose, and their number observed did not exceed about twenty.

The discovery of so considerable a number of the curious nests of the Dwarf-Mouse, in a comparatively limited space, afforded great satisfaction, the more so as a previous and active search after them during forty three years had led to no other result than the discovery of two such nests: the one found, in the year 1853, among the branches of a shrub of *Hippophaë rhamnoides*, in the downs to the north of the village of Noordwijk upon Sea; the other, found in the year 1854, placed in one of the oakshrubs growing southward of the aforesaid locality, about a mile distance from the seashore.

Wishing to preserve from destruction the colony of the interesting little animal, established in the neighbourhood of my residence, I selected for our collection no more than about twenty nests, showing the different modes of variation, which they present in general.

I must state beforehand, that the ditch, concealing the largest number of nests of the Dwarf-Mouse, was also inhabited by a couple of *Calamodyta arundinacea* and by an other couple of *Calamodyta phragmitis*, that two couples of *Calamodyta palustris* had established themselves in the herbs of the immediate outside border of the reeds, and that the nests of all these birds were found and collected.

The nests of the Dwarf-Mouse are in general of a globular form, of the average size of a man's fist, and show, on one side, somewhat towards the top, a circular opening, sufficiently wide for the entrance of the little animal. The nests, found in the ditch, were commonly placed towards the top of the reeds; for those, built on the outside of the water and in the shrubs, the animals had chosen gramineous plants and all sorts of herbs, especially *Rubus fruticosus*, *Rumex acetosa* and *Epilobium*. It happens even, that our little animal, probably pressed by the necessity of bringing forth its progeniture, accommodates for this purpose one or the other bird's nest within its reach, by covering these nests with a cap of grass. In the two instances observed of this kind, one of the nests belonged to *Calamodyta arundinacea*, the other to *Sylvia cinerea*, the latter one still containing the broken eggs of the bird.

Several nests contained the still naked young mice. As to the old mice, there was no other way to get hold of them than catching them with the hand, while they are in their nest or about to enter it. And even in this way, chance alone could insure success, the movements of the little creature being performed with surprising agility, even whilst climbing, their is tail partly twined about the reeds or branches, a particularity, also observed by Pallas with respect to *Mus vagus* and *Mus betulinus.* It was in vain that we set out traps of different structure and provided them with all kind of bait, — *Mus sylvaticus* and *M. musculus* were from time to time caught in those traps, but never a single *M. minutus.*

I think it worth while, to mention here the singular fact of a specimen of *Mus minutus*, observed in the year 1851, as a straggler in the middle of the town of Leiden. A living specimen of this mouse, having been caught in a trap of iron network, placed in a room, was brought to one of the inhabitants, then a student at the University. This gentleman, Mr. R. T. Maitland, as an experienced naturalist at once recognized the species, and seeing that the specimen was a pregnant female, he shut it up in a bird's cage, at the same time putting into it a quantity of papershreds, cotton and other soft matter. The little animal soon afterwards began to build a nest in the wonted globular form, and to deposit in it two young ones.

I now return to our colony of mice in the ditch. After the breeding season, the reed of the ditch was cut down, with the exception of a small patch of reed, in the middle of the ditch and beyond the reach of the mowers. We then saw to our great astonishment, that our little mice established between these reeds nests of a very different character from those, destined to receive their progeniture. They were composed of different watermoss (*Hypnum*), covering the surface of the bottom of the ditch, which for want of water had almost become dry, and attached between several stems of reed, exactly like the nests of most of the reed-warblers, but of a fusiform shape, from one half to one foot high and from three to four inches in diameter about their middle. These nests, placed at the height of one foot above the level of the water, showed no inlet. The animal, when trying to make use of this refuge, removed that part of the upper covering of the nest, which is less densely interwoven and is soon entirely concealed between the moss. This part of the nest serves at the same time as a store-house for some winter-provision, as was proved by some remnants of coleopterous and a few other insects.

The Dwarf-Mouse choosing, in dry parts, heaps of grass or straw for a winter-retreat, or concealing itself among shrubs and herbs, it is evident that the building of the peculiar sort of winternests, such as we have described, is owing to a just calculation of being safe against the danger of drowning.